

COCHLEARIA OFFICINALIS ARCTICA IN THE
VICINITY OF POINT BARROW, ALASKA

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Cochlearia officinalis ssp. *arctica* (Schlecht.) Hultén is generally considered to be a strand and coastal marsh plant. In the vicinity of Point Barrow it shows a wide range of habitats. The primary factor in its local distribution appears to be the disturbance of the vegetation cover either by erosion or by human activity.

Cochlearia grows along the Arctic Coast and along the banks of brackish lakes and lagoons above the high water mark and behind the coarse pebbly beach in sandy or muddy areas. No localities were observed where it grew subject to submersion at high tide or during a storm as does *C. sessifolia* Rollins (Rollins 1941, p. 182) on Kodiak Island. It is commonly associated with *Arenaria peploides* L., *Mertensia maritima* (L.) S. F. Gray, *Phippsia algida* (Soland.) R. Br., *Puccinellia paupercula* (Holm) Fern. & Weath., *Sagina intermedia* Fenzl., *Saxifraga rivularis* L., and *Stellaria humifusa* Rottb. Less frequently *Elymus mollis* Trin., *Papaver radicum* Rottb., and *Potentilla emarginata* Pursh are found growing with it. The strand association forms a sparse vegetation cover allowing *Cochlearia* to assume a prostrate caespitose rosette-like form, often to 15 cm. in diameter. Young seedlings are often observed which have germinated beneath the mature plants.

There are two types of topography immediately behind the ocean beach: 1, gently sloping tundra, and 2, steep bluffs and cliffs some of which are 50 feet high. On the first type, the tundra and strand meet and gradually intergrade. *Cochlearia* is found in decreasing regularity as one goes back from the beach. On the tundra, characterized by *Cassiope tetragona* (L.) D. Don, *Dryas integrifolia* Vahl., *Dupontia fisheri* R. Br., *Eriophorum* spp., *Luzula* spp., *Poa arctica* R. Br., *Petasites frigidus* (L.) Fries, *Potentilla emarginata* Pursh, *Salix* spp., and *Vaccinium vitis-idaea* ssp. *minus* (Lodd.) Hult., *Cochlearia* is almost always lacking. On steep coastal bluffs and on hummocks bordering fresh water lakes where erosion and slumping is constantly taking place due to wave action and thawing of permanently frozen ground,

Cochlearia often grows to the exclusion of other species. The general shape of the plants is to some extent dictated by the microtopography. On flat ground surfaces, whether horizontal or sloping, the more typical rosette form dominates. Plants growing in depressions have an elongation of the main axis and the lateral branches. The fact that *Cochlearia* can grow removed from the ocean is seen by its occurrence on the inland hummocks. In one particular instance it grew profusely on barren lake banks ten miles from the ocean. Another inland habitat is the bare tops of peat hummocks often resulting in pure stands. Associated inland species are primarily *Potentilla emarginata* Pursh, *Draba* spp., *Phippsia algida* (Soland.) R. Br., and *Saxifraga rivularis* L.

Wherever man dwells he alters natural conditions and permits certain species to assume a weed status. This is true in the Arctic as it is in more temperate climates. There are several abandoned Eskimo villages in the vicinity of Point Barrow. These sites have been altered by trampling of the original vegetation cover, by the enrichment of the soil by human and canine excreta, and by the formation of numerous kitchen middens. In the black heavy nitrogenous soil *Cochlearia* has spread rapidly. At the old village site, Nuwuk, at Point Barrow much of the ground is covered by pure stands of *Cochlearia*. The stands are often several meters in diameter and the surface coverage is complete. Elsewhere it grows intermingled with *Cerastium beeringianum* C. & S., *Dupontia fisheri* R. Br., *Poa arctica* R. Br., *Phippsia algida* (Soland.) R. Br., *Saxifraga rivularis* L., and *Stellaria humifusa* Rottb., both on the ground and on the ancient Eskimo sod huts. The typical form of the plants growing in close physical contact with other species is a spindly one with a much elongated central axis and lateral basal branches, up to 15–20 cm. long. Polunin (1948, p. 126) notes a similar occurrence of *Cochlearia officinalis* subspecies around inhabited areas on the Cumberland Peninsula across Davis Strait from Greenland.

Along Elson Lagoon, in the vicinity of Point Barrow, the shore line is constantly being eroded by wave action and the melting of subsurface ice masses, causing large pieces of sod and earth to slump into the Lagoon. *Cochlearia* is often abundant on the newly exposed bare faces and tends to invade the mature tundra above.

Cochlearia is probably a biennial plant. The large number of dead plants among the living ones suggests this. Flowering may be delayed until the second year. The season begins shortly after the snow has melted along the coast, usually about the 15th of June and lasts until about the end of September.

LITERATURE CITED

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SUGGESTION FOR THE ASSIGNMENT OF TORREYCHLOA TO PUCCINELLIA

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ON the basis of cytological and morphological data, Church (1949) removed from *Glyceria* the "pauciflora group" of species and proposed for them the new genus *Torreyochloa*. The purpose of the present discussion is to indicate first that the valuable data supplied by Church demonstrate that the species of the "pauciflora group" of *Glyceria* should be transferred to *Puccinellia* and second to validate for use the binomial which is necessary for the eastern North American species which is involved in this consideration.

The separation of *Glyceria* from *Puccinellia* in current manuals and floras is unsatisfactory. In the new eighth edition of Gray's Manual, for example, Fernald (1950), in his key, described the sheaths of *Glyceria* as closed and the lodicules as united. Yet, as species no. 13 under *Glyceria*, he listed *G. pallida* with the lower sheaths free (= open) at the summit, but did not mention the lodicules which are free. Mrs. Chase (1951), in the useful second edition of Hitchcock's Manual, separated *Puccinellia* on a basis of the faint nerves of the flowering glumes and the habitat